

Figure 4-6.—Single transformer hung with crossarm brackets.

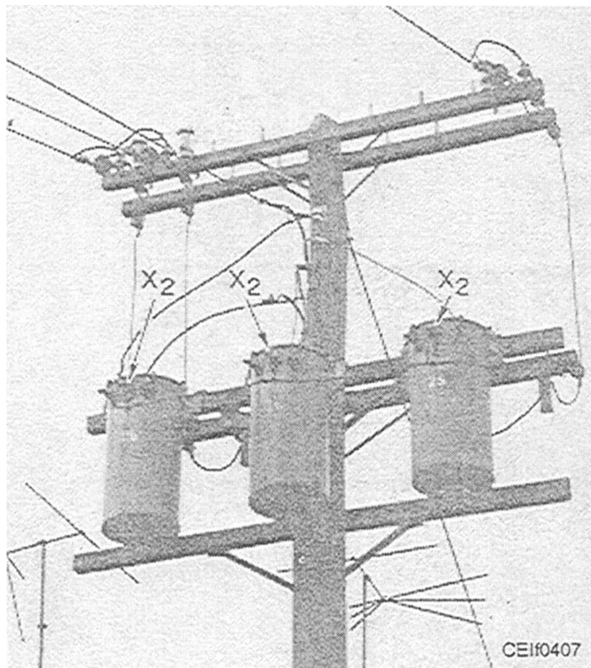


Figure 4-7.—Three-phase bank of transformers hung on a crossarm.

Formerly, all banks of three transformers were hung with crossarm brackets or mounted on a platform between two poles. Because of improved materials, however, transformer capacities have been enlarged without increasing their size and weight. This improvement means that banks of three large transformers can now be hung on a pole with a through-bolt type of suspension, as shown in figure 4-8.

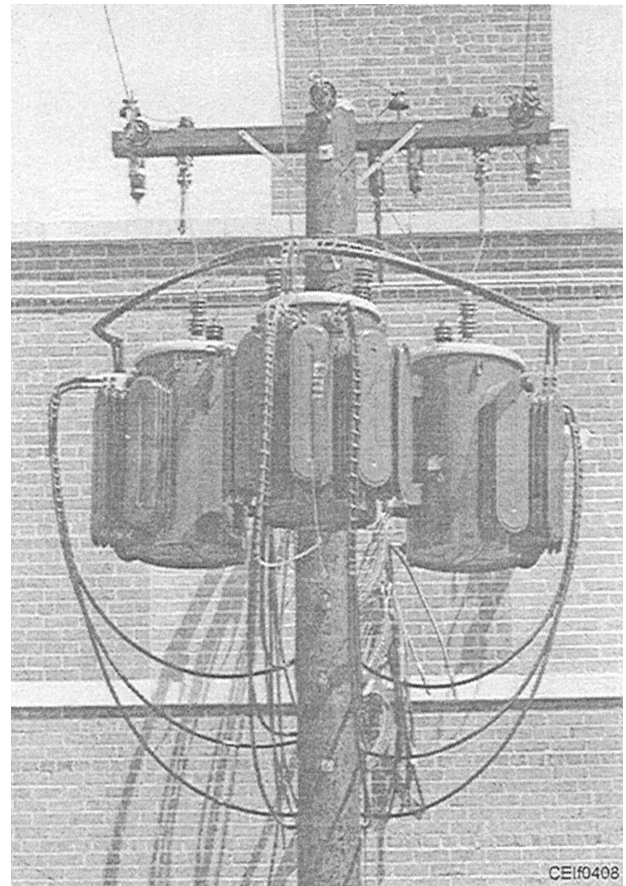


Figure 4-8.—Three 37.5 kVA transformers mounted with through-bolt type of brackets.

The old method of mounting transformers on a platform required an extra pole and the added cost of building the platform. This method is still used when installing large transformers and in special job applications. Figure 4-9 shows the platform method of mounting a bank of three single-phase, 25 kVA transformers-Y-connected to obtain single-phase and three-phase power.

Grounding the distribution system helps to prevent accidents to personnel and damage to property in the event of insulation breakdown, accidental shorting of high- and low-voltage lines, or a lightning strike.

If a high-voltage line is accidentally shorted with a low-voltage line, the current will flow through the secondary coil of the transformer to the secondary ground that will then cause the primary protective device to open the circuit. In this case, the primary protective device functions as the substation circuit breaker. An accidental shorting of the primary and secondary windings in the transformer will cause the primary fuse to open.

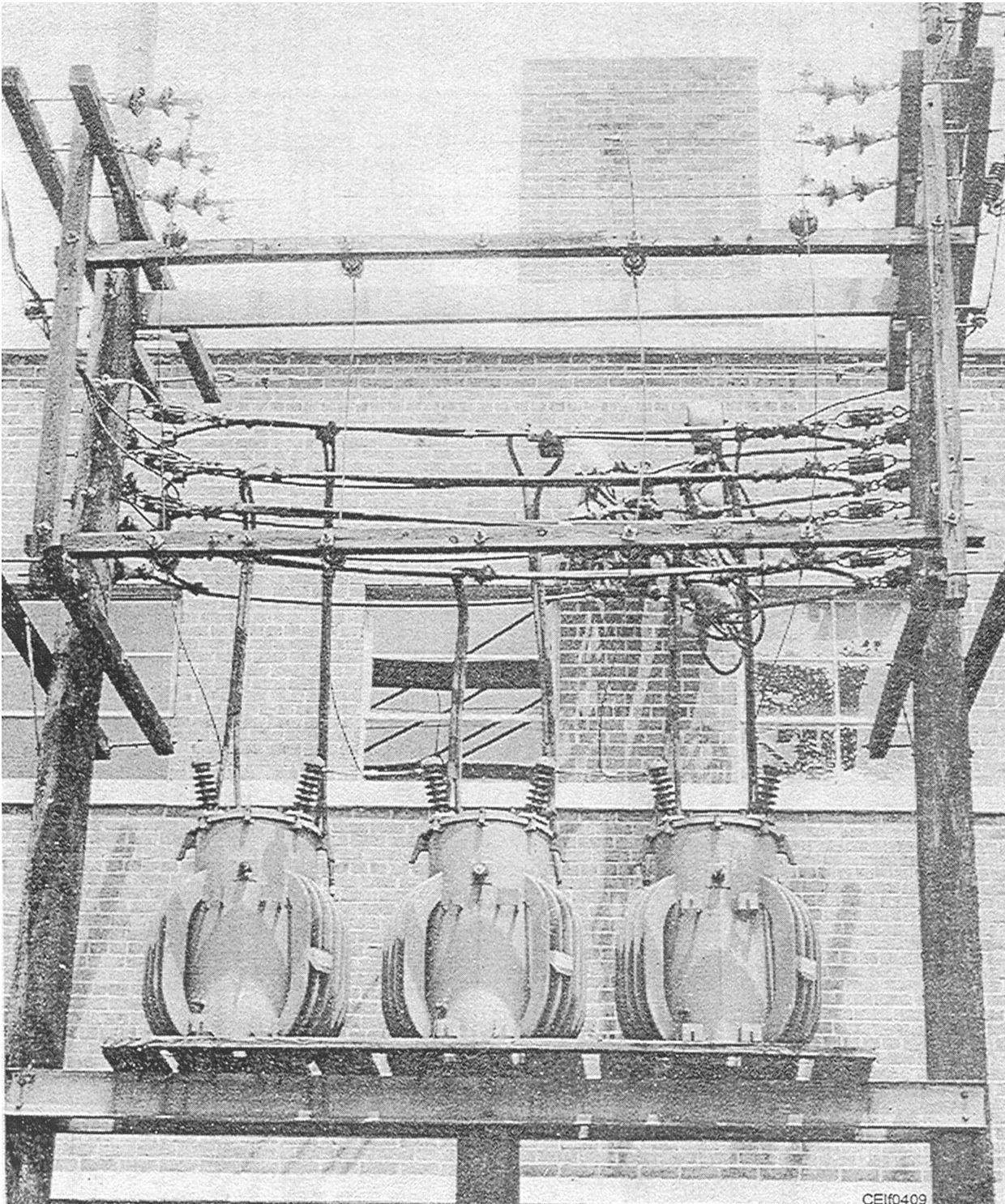


Figure 4-9.—Three-phase 25 kVA transformers mounted on an H-frame platform.

If there are no ground connections, the primary voltage will be impressed upon the secondary conductors, which are usually, insulated for 600 volts, and considerable damage to the equipment will occur.

Great danger will exist for everyone touching any electrical equipment at this time.

Ground resistance must not exceed 25 ohms to ground. This resistance can be measured with various